

NOTES ICHTYOLOGIQUES

ON THE AUTHORSHIP, IDENTITY AND TAXONOMIC POSITION OF *PLEURONECTES COMMERSIONII* LACEPÈDE, 1802 (PLEURONECTIFORMES, SOLEIDAE).

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RÉSUMÉ. Sur la paternité, l'identité et la position taxinomique de *Pleuronectes commersonii* Lacepède, 1802 (Pleuronectiformes, Soleidae).

Les auteurs discutent et démontrent la validité taxinomique de l'espèce décrite par Lacepède, en 1802, sous le nom de *Pleuronectes commersonii*. Cette espèce appartient bien à la famille des Soleidae et est maintenant placée dans le genre *Synaptura*.

Key words. Soleidae - *Pleuronectes commersonii* - Taxonomy.

Lacepède figured (1801: plate 12, fig. 1) and described (1802) a nominal species of flatfish, *Pleuronectes commersonii*, based entirely on information originally contained in an unpublished illustration and manuscript of Commerson (MS 528, XXV.181; "Bibliothèque centrale, Muséum national d'Histoire naturelle, Paris"). Since the publication of Lacepède's work, considerable confusion has ensued concerning the authorship and date of authorship of this nominal species, as well as its identity and taxonomic placement. The name proposed by Lacepède has most frequently been applied to a commonly occurring species of soleid flatfish (usually *Synaptura commersonii*) of some commercial importance in the Indian Ocean (Menon and Joglekar, 1978). No type specimen of this nominal species has been found (the specimen illustrated is assumed lost), nor have we any reason to believe that one is still extant. Given the long history of association of Lacepède's name with this commercially important flatfish, the uncertainty associated with this name needs to be resolved in order to stabilize nomenclature for this species. Authorship and date of authorship of *Pleuronectes commersonii* can

be determined by re-examination of original published literature, whereas the question of identity of this species can only be resolved by referring to the unpublished illustration of this species prepared for Commerson, which provides new information that permits the correct taxonomic placement for this nominal species.

Date of authorship, and authorship itself, for Lacepède's nominal species, *Pleuronectes commersonii*, have been the subject of alternative views by subsequent investigators. Contributing to confusion surrounding the authorship and taxonomic placement of this nominal species are the lack of type specimens and inconsistencies between the original description and the published illustration of the species. This confusion is largely due to the fact that the illustration of this species published one year prior (Lacepède, 1801) to the description (Lacepède, 1802) was labelled with a vernacular name, which was incorrectly interpreted as a scientific binomial by some subsequent authors (*e.g.*, Cantor, 1849; Günther, 1862). Cuvier (1817) attributed authorship of the species to Lacepède (1801), but then in the same paper questioned whether this name should be considered a *nomen nudum*. Swainson (1839) attributed authorship of this flatfish species to Russell (as *Brachirus commersonii*) without further comment. Cantor (1849) and Günther (1862) both attributed authorship to Lacepède, but considered the correct scientific name of the species to be based on the name "Le Pleuronecte Commersonnien" accompanying the illustration of this nominal species published in 1801, rather than *Pleuronectes commersonii* applied in the text description of 1802. In his revision of the soleid genus *Synaptura*, Chabanaud (1938) also doubted that Lacepède actually provided a binomial for this nominal species and attributed authorship of the species to Swainson (1839). Subsequent works (Menon and Joglekar, 1978) disagreed with Chabanaud (1938), and instead, referred Lacepède's species either to the soleid genera *Brachirus*, or more often, *Synaptura*. Fricke (1999) recently concluded that two species were described by Lacepède (1801, 1802).

Establishing the appropriate date and authorship for this nominal species requires evaluating the name associated with the illustration published in Lacepède (1801). The illustration (originally prepared for Commerson) was accompanied in Lacepède (1801) only by the vernacular name "Le Pleuronecte Commersonnien." The

name “Le Pleuronecte Commersonnien” in Lacepède (1801) was incorrectly interpreted as a latinized binomial for the species by some subsequent authors (e.g., Cantor, 1849; Günther, 1862). Rather, it is a vernacular name constructed in a fashion consistent with other vernacular names for their respective species. Thus, “Le Pleuronecte Commersonnien” does not constitute a scientific name for this nominal species. This conclusion agrees with those of Chabanaud (1938) and Eschmeyer (1998) that the date of authorship for *Pleuronectes commersonnii* Lacepède does not derive from the illustration published in 1801.

Formal description of this nominal species occurs in Lacepède (1802: 656-657), which includes a written description and latinized binomial (*Pleuronectes commersonnii*) for the nominal species represented in the drawing published in 1801 as evidenced by cross-referencing of the vernacular name “Le Pleuronecte Commersonnien” between the two publications. This finding is contrary to the synonymy presented in Chabanaud (1938), which did not consider Lacepède (1802) as the author of *Pleuronectes commersonnii*.

The identity and taxonomic placement of Lacepède’s nominal species has long been the subject of differing opinions. While a majority of previous authors beginning with Cuvier (1817) considered *Pleuronectes commersonnii* as a valid soleid flatfish species (flatfish species with dextral orientation), other authors have questioned the exact identity and taxonomic placement of Lacepède’s species (Chabanaud, 1937; Eschmeyer, 1998; Fricke, 1999). Re-examination of Lacepède (1801, 1802) and the unpublished Commerson manuscript reveals that Lacepède described this nominal species based entirely on information originally contained in the unpublished illustration and manuscript of Commerson (MS 528, XXV.181). No evidence exists to indicate that Lacepède either actually examined the specimen illustrated for Commerson, or any other specimen of this nominal species while preparing his description of *Pleuronectes commersonnii*. Furthermore, no type specimens were designated by Lacepède and no potential types are known to exist for this nominal species (Chabanaud, 1937), a situation that precludes determination of the identity and taxonomic placement of this species by direct examination of specimens.

The inconsistency between the information available in the illustration and that provided

in the original description has been the major factor contributing to the confusion regarding the identity of this nominal species. The figure published in Lacepède (1801) depicts a sinistral flatfish with soleid features (Fig. 1a). Lacepède (1802) placed this species in his all-encompassing family Pleuronectidae (*sensu* Linnaeus) among the sinistral pleuronectiform species. The written account (Lacepède, 1802) also describes a sinistral species (as did the account in Commerson’s unpublished manuscript), but based on the information contained therein, the taxonomic affinity of this species among sinistral flatfishes can not be ascertained (see also Chabanaud, 1937).

Cuvier (1817) first recognised the problem of discrepancies between the written description and the fish figured in Lacepède (1802: 656-657 and 1801, pl. 2, fig. 2, respectively). He suggested that perhaps at least two species were included in the original description. Nevertheless, after noting these discrepancies, Cuvier, perhaps more influenced by the features of the illustrated fish than by the written description, placed *Pleuronectes commersonnii* Lacepède into his subdivision of flatfishes containing the soles. Swainson (1839) and Cantor (1849), also placed this nominal species among soleid fishes (dextral flatfishes, e.g., with eyes on the right side of the body). Since Cantor (1849), there has been long-standing assignment of this species in the soleid genus *Synaptura* (see synonymy in Chabanaud, 1938). Günther (1862), although expressing some uncertainty about the authorship of the species, placed it in the soleid genus *Synaptura*. Chabanaud (1937), after lengthy discussion of the confusion surrounding the name *Pleuronectes commersonnii*, was unable to reconcile placing this nominal species, based on a sinistral specimen, into the Soleidae. After careful consideration and elimination of the possibility that the specimen Lacepède described may have been a reversed soleid, and after considering other alternative taxonomic placements, Chabanaud (1937) concluded that identification and correct taxonomic placement of Lacepède’s species was unresolvable until further information became available. Nonetheless, in the next year, Chabanaud (1938) considered this species as a member of the soleid genus *Synaptura* (although attributing authorship to Swainson). Although detailed, Chabanaud’s (1937, 1938) discussions essentially repeated arguments presented by Cuvier (1817) regarding discrepancies between the illustration and written description appearing

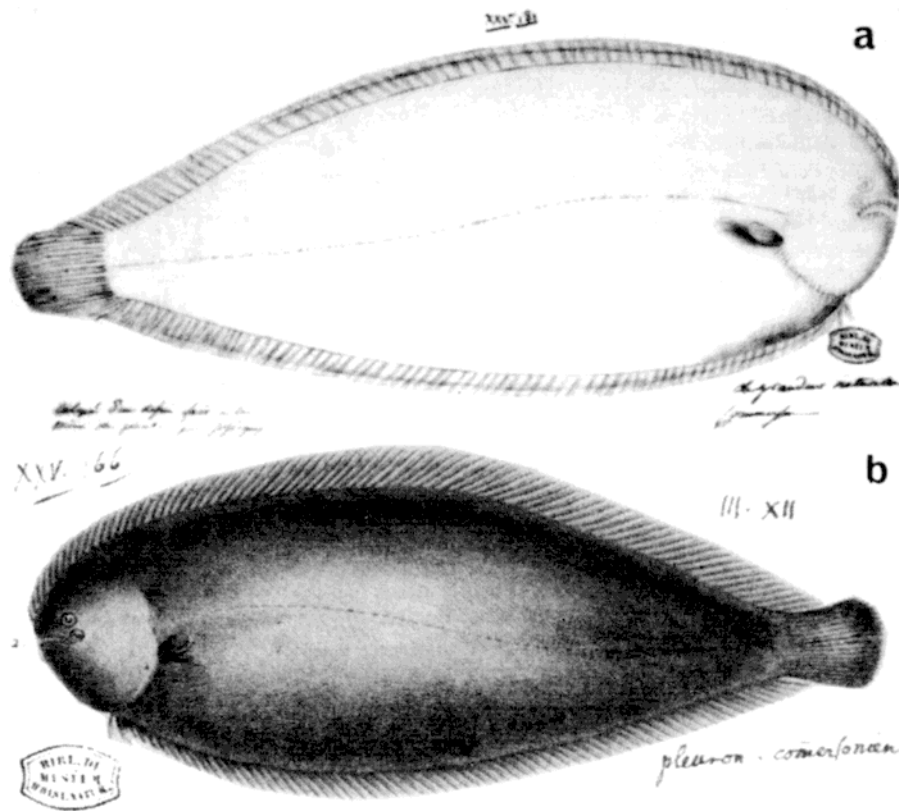


Fig. 1. Illustrations of *Pleuronectes commersonii*. a: Illustration originally published as figure 1 of plate 12 in Lacepède (1801). b: Unpublished drawing (MS 528, XXV.181; Bibliothèque centrale du Muséum national d'Histoire naturelle, Paris) prepared by Commerson's artist, Jossigny.

in Lacepède (1801, 1802) and did not involve any examination of Commerson's original drawing. Thus, his conclusions were made without benefit of this resource. Menon and Joglekar (1978), in their systematic study of some soleid genera occurring in Indian waters, considered Lacepède's species to be a member of *Synaptura* within the Soleidae without consulting the original description or figures of Commerson.

More recently, Eschmeyer (1998) and Fricke (1999), although accepting Lacepède as the original describer, suggested quite different taxonomic placements (Pleuronectidae and Bothidae, respectively) for this nominal species. Eschmeyer (1998) did not provide justification for considering Lacepède's nominal species as a member of the dextral Pleuronectidae. Fricke (1999), on the

other hand, consulted the unpublished manuscript and drawings of Commerson. However, after referring to this work and that of Lacepède, he arrived at several erroneous conclusions. Fricke (1999: 570, 573) recognised that the illustration and written description of Lacepède were published in different years (1801, 1802) and then concluded that two distinct species were treated in Lacepède's works. Fricke (1999: 573) treated *Pleuronecte Commersonnien* Lacepède, 1801, as a junior synonym of the soleid *Pardachirus marmoratus* with an authorship of Commerson and Lacepède in Lacepède (1802) based on the fish illustrated in figure 1 of plate 12 of Lacepède (1801). Although this figure is a soleid, the species illustrated with the dorsal and anal fins conjoined with the caudal fin is definitely not *Parda-*

chirus marmoratus, which has dorsal and anal fins separate from the caudal fin. Apparently, Fricke (1999) confused figures 2 and 3 on plate 12 of Lacepède (1801). He erroneously concluded that figure 2 was based on a large, bleached specimen of *Pardachirus marmoratus*, when in fact figure 3 illustrates *Pardachirus marmoratus*. It is this mix up, we believe, which prompted Fricke into erroneously placing *Pleuronectes Commersonnii* in the synonymy of *Pardachirus marmoratus*. Furthermore, the name appearing on plate 12 published in Lacepède (1801) is a vernacular name, not a scientific binomial. The fact that Fricke did not italicise this name in the synonymy of *Pardachirus marmoratus* suggests that he recognised it as a vernacular name, but then erred in treating this as an available name for a species different than that appearing in the written description. The name *Pleuronectes commersonnii* proposed in Lacepède (1802) is, in contrast, the only scientific name used in the original description of this species. That only one species was intended is evidenced by the cross-referencing between the illustration and text description within Lacepède's works (1801, 1802).

The second name Fricke treated (1999: 570) was that of *Pleuronectes commersonnii* (authorship listed as Commerson and Lacepède in Lacepède, 1802) based on the text description (pp. 599-600, 652-657). He concluded that this nominal species was referable to the bothid flatfish, *Bothus mancus* (Broussonet, 1782). Because Lacepède's description is somewhat vague, we can not rule out the possibility that more than one species was included in the original description, or that the written description was based on a species other than a soleid. However, we completely disagree with Fricke's assignment of *Pleuronectes commersonnii* in the synonymy of *Bothus mancus* within the Bothidae because the illustration (Fig. 1a) of "Le Pleuronecte Commersonnien" clearly does not represent a member of the family Bothidae (see discussion in Chabanaud, 1937). Also, the overall body shape, a terminal mouth without overhanging snout, presence of a pectoral fin, the single lateral line and caudal fin shape, definitely distinguishes the figured specimen from any member of the Cynoglossidae. However, given the sinistral orientation of the fish illustrated, it is difficult to confidently place this species in the Soleidae, although certain features of the illustrated fish (e.g., the small mouth, the preopercle concealed beneath the skin, and the

conjoined dorsal, anal and caudal fins) all strongly indicate that the illustrated fish was a soleid flatfish.

If *Pleuronectes commersonnii* is a soleid flatfish, then why would it be depicted in the published illustration in a sinistral orientation since soleids, except for rare cases of asymmetry reversal (see Gudger, 1935), typically have a dextral orientation? Consulting the unpublished drawing of this fish prepared by Commerson's artist, Jossigny, reveals the answer to this question. The original drawing of the species subsequently described by Lacepède (1802) as *Pleuronectes commersonnii* clearly shows this illustration is based on a dextral species of flatfish (Fig. 1b) and the original unpublished drawing prepared by Jossigny renders an assignment of this species to the Soleidae unambiguous, which is an important conclusion given that no type specimens are known to exist. For some inexplicable reason, perhaps to match the written description appearing in Commerson's unpublished manuscript, the original drawing of a dextral soleid appears as a sinistral flatfish (see Fig. 1a) when published in Lacepède (1801). Although not commonly occurring, figures of flatfishes appear even in recently published works with unintentional reversal in symmetry due to publisher's errors when arranging photographs of these fishes (a recent example is the unintentionally reversed specimen of *Aseraggodes haackeanus* in figure 361, p. 360, of Gomon *et al.*, 1994).

In conclusion, *Pleuronectes commersonnii* Lacepède (1802) is a valid name for a soleid flatfish. This determination is based on characteristics of the fish illustrated in Lacepède (1801), in combination with the dextral orientation of the fish in the unpublished drawing of this species originally prepared for Commerson. Given the long history (beginning with Cuvier, 1817) of recognition of *Pleuronectes commersonnii* as an available name for a species of soleid flatfish and the information contained in the unpublished drawings of this species, it is in the best interest of nomenclatural stability to continue to recognise Lacepède's species as a member of the Soleidae. Features of the illustrated fish indicate that this species is assignable to the genus *Synaptura* (*sensu* Chabanaud, 1938; Desoutter *et al.*, 2001). Therefore, the appropriate current nomenclature for this species is *Synaptura commersonnii* (Lacepède, 1802).

Acknowledgments. R. Vari, United States National Museum (USNM), provided comments on an earlier draft. We thank D. Smith (USNM) for assistance with interpretations of the International Code of Zoological Nomenclature. Funding for TM to work in the Laboratoire d'Ichtyologie générale et appliquée was provided by the visiting professorship program at the Muséum national d'Histoire naturelle. Figures were prepared from slides provided by the "Bibliothèque centrale du Muséum national d'Histoire naturelle".

REFERENCES

- CANTOR T.E., 1849. *Catalogue of Malayan Fishes. Asiat. Soc. Bengal J.*, 18(2): 981-1443.
- CHABANAUD P., 1928. *Remarques sur quelques genres de la famille des Soleidae. Bull. Soc. Zool. Fr.*, 53: 272-279.
- CHABANAUD P., 1937. *Qu'est ce que le "Pleuronectes commersonien" de Lacepède? Bull. Mus. natn. Hist. nat.*, 9(3): 193-198.
- CHABANAUD P., 1938. *Contribution à la morphologie et à la systématique des Téléostéens asymétriques. Ire partie. Révision du genre Synaptura. Arch. Mus. Hist. Nat.*, (6)15: 61-108.
- CUVIER G., 1817. *Le Règne Animal distribué d'après son Organisation pour Servir de Base à l'Histoire naturelle des Animaux et d'Introduction à l'Anatomie comparée. Les Reptiles, les Poissons, les Mollusques et les Annélides. Edition 1, 2: i-xviii* 332 p.
- DESOUTTER M., MUNROE T.A. & F. CHAPLEAU, 2001. *Nomenclatural status of Brachirus Swainson, Synaptura Cantor and Euryglossa Kaup (Soleidae, Pleuronectiformes). Ichthyol. Res.*, 48: in press.
- ESCHMEYER W.N., 1998. *Catalog of fishes. Spec. Publ. n°* 3 vols, 2905 p. California Academy of Sciences.
- FRICKE R., 1999. *Fishes of the Mascarene islands (Réunion, Mauritius, Rodriguez). An annotated checklist with descriptions of new species. Theses Zoologicae* 31: 759p. Koenigstein Koeltz Scientific Books.
- GOMON M.F., GLOVER J.C.M. & R.H. KUITER, 1994. *The fishes of Australia's south coast.* 992 p. Adelaide: State Print.
- GUDDER E.W., 1935. *Abnormalities in flat-fishes (Heterosomata). I. Reversal of sides. A comparative study of the known data. J. Morphol.*, 58(1): 1-39.
- GÜNTHER A., 1862. *Catalogue of the fishes in the British Museum. Catalogue of the Acanthopterygii Pharyngognathi and Anacanthini in the collection of the British Museum. Vol.* 534 p.
- LACEPÈDE B.G.E., 1801. *Histoire naturelle des poissons*, 3: i-lxxi 558 p.
- LACEPÈDE B.G.E., 1802. *Histoire naturelle des poissons*, 4: i-xliv 228 p.
- MENON A.G.K. & A. JOGLEKAR, 1978. *Taxonomic status of the genera Synaptura Cantor, 1550 (sic) and Euryglossa Kaup, 1858 with descriptions of species referable to these occurring in seas of India. J. Mar. Biol. Assoc. India*, 20(1-2): 10-21.
- SWAINSON W., 1839. *The natural history and classification of fishes, amphibians, and reptiles, or monocardian animals. London. Vol. 1: i-vi* 448 p.

Reçu le 12.12.2000.

Accepté pour publication le 04.07.2001.